REMARKS

This is responsive to the Final Rejection dated June 17, 2010. Claim 1 is amended, based upon such disclosure as that in lines 12-13 on page 9 of the specification. New claim 5 is presented, based upon such disclosure as that in Examples 1 to 6 of Table 1. The upper limit in new claim 5 is derived from Example 6. No new matter is introduced by this Amendment. Claims 1 and 3 to 5 are now pending in the application.

The invention

In the present invention, the copolyester (A) comprises a hydroxy carboxylic acid unit as constituent units. Applicants' copolyester (A) contains hydroxy carboxylic acid units of 5 or less carbon atoms in amounts of 60 to 98% by mol based on 100% by mol of all the constituent units in (A). In Applicants' copolyester (A), the remaining units are composed of a dicarboxylic acid unit and a diol unit. The present invention, therefore, discloses the amount of the hydroxy carboxylic acid units of 5 or less on the assumption that the dicarboxylic acid and diol are also contained in copolyester (A).

Prior art rejection

Claims 1, 3, and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US 4,565,851 (Barbee) in view of JP 2002-264206 (Sakurai). The rejection is respectfully traversed.

In contrast to the present invention, which discloses the amount of the hydroxy carboxylic acid units of 5 or less on the assumption that the dicarboxylic acid and diol are also contained in copolyester (A), Sakurai discloses, in paragraph [0028], a preferable embodiment of the glycolic acid copolymer by stating that the proportion of the repeating unit composed of glycoside is 78 to 90 mol%. However, this disclosed amount in Sakurai is provided on the assumption that "the glycolic acid copolymer is obtained by ring-opening polymerization using glycoside and a monomer other than glycolide." See paragraph [0028]. As the "monomer other than glycoside," the following paragraph (i.e., paragraph [0029] in Sakurai) discloses only examples of cyclic monomers.

Although the disclosure in paragraph [0027] of Sakurai lists a diol and a dicarboxylic acid unit as examples of monomers which may be copolymerized with the main monomer, Sakurai provides no disclosure of the amount of hydroxy carboxylic acid units of 5 or less carbon atoms when the copolymer is copolymerized with a dicarboxylic acid and a diol.

For the foregoing reasons, it is manifest that Sakurai's copolymer is significantly different from Applicants' copolymer (A).

To emphasize the advantageous effects of the present invention, Example 3 and Comparative Examples 1 and 3 are reproduced from Table 1 of the specification:

		Example 3	Comparative Example 1	Comparative Example 3
A component weight fraction	A/(A+B) (wt.%)	A1 (10)	PGA (10)	A4 (10)
B component weight fraction	B/(A+B) (wt.%)	PET (90)	PET (90)	PET (90)
C13-NMR signal intensity ratio (%)	GA-GA-GA(S_{AA}) EG-GA-GA GA-GA-PA EG-GA-PA(S_{BB})	29 20 27 23	72 10 16 2	1 9 11 79
S_{AA}/S_{BB}		1.2	36	0.01
CO_2 permeability constant		15.5	13.2	20.6
Transparency		1.7	58.9	1.1

Applicants submit that the combination of Barbee and Sakurai corresponds to Comparative Examples 1 and 3.

Comparative Example 1 substantially corresponds to the copolymer taught as being preferable in Sakurai. In Comparative Example 1, neither of the units neighboring the glycoside includes units which are derived from diols and dicarboxylic acids. In the copolymer taught as being preferable in Sakurai, the glycolic acid copolymer contains glycoside and a monomer other than glycoside and is obtained by ring-opening polymerization. Therefore, in the preferable copolymer of Sakurai, neither of the units neighboring the glycoside includes units derived from diols and dicarboxylic acids. The copolymer taught as being preferable in Sakurai is therefore substantially a polyglycolic acid.

Comparative Example 3 is an example of a copolymer obtained based on the general description of Sakurai, rather than being a polymer taught as preferable in Sakurai. The copolymer of Comparative Example 3 contains diol units and dicarboxylic acid units.

Melt mixing in Example 3 and Comparative Example 1 is carried out in a similar way, but this alone does not automatically satisfy the claimed ratio of S_{AA}/S_{BB}, as illustrated in the above table. The ratio of S_{AA}/S_{BB} in Comparative Example 1, which is outside of the claimed range of S_{AA}/S_{BB}, results in inferior transparency. Likewise, the ratio of S_{AA}/S_{BB} in Comparative Example 3 does not satisfy the claimed range of S_{AA}/S_{BB}, and results in a higher CO_2 permeability constant, which represents inferior gas barrier properties.

In view of the foregoing, there is no realistic basis for the Examiner's contention that replacing the polyglycolic acid of Barbee with the copolymer of Sakurai would provide a resin composition that satisfies the S_{AA}/S_{BB} ratio recited in Applicants' claims. The presently claimed invention – considered as a whole – is manifestly not obvious from the disclosure of the references applied. Withdrawal of the rejection based upon Barbee in view of Sakurai is in order and is earnestly solicited.

Conclusion

In the present invention, an inventive concept lies in controlling the ratio S_{AA}/S_{BB} of a resin composition so as to fall within a specified range. This provides unexpected and excellent advantages. The Examiner's assumption that the mixing would automatically produce products falling within the range recited in the claims is unfounded. The assumption does not render the present invention obvious from the Barbee and Sakurai disclosures.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Richard Gallagher, Reg. No. 28,781, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By _____

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